

Notice of Allowability

Application No.

10/664,887

Examiner

James L. Habermehl

Applicant(s)

YANG, WON-CHOUL

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to papers filed 22 Sep 03 and 24 Sep 04.
2. ☒ The allowed claim(s) is/are 1-17, renumbered 1-3, 5-6, 13-14, 7-10, 4, 11-12, and 15-17 respectively.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2. The drawings were received on 24 Sep 04. These drawings are acceptable.

3. Claims 1-17 are allowed over the prior art of record. The following is an examiner's statement of reasons for allowance:

Claims 1 and 6 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a method to control changes in a flying height between a write head and a disk, and a computer readable medium having embodied thereon a computer program to perform a method, comprising changing an overshoot value of the write current in relation to a temperature and setting the overshoot value of the write current as a threshold upon determining that the head and disk are in contact, as presented in the environment of claims 1 and 6. It is noted that the closest prior art, Brunnett et al., shows changing the write current and setting the write current as a threshold upon determining the head and disk are in contact. However, Brunnett et al. fails to disclose changing an overshoot value of the write current in relation to a temperature and setting the overshoot value of the write current as a threshold upon determining that the head and disk are in contact as claimed.

Claims 4 and 15 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose an apparatus and method to control changes in a flying height between a write head and a disk comprising changing an overshoot value of the write current at each magnitude of the write current and storing or setting the

Art Unit: 2651

overshoot value of the write current as a threshold upon determining that the head and disk are in contact, as presented in the environment of claims 4 and 15. It is noted that the closest prior art, Brunnett et al., shows changing the write current and setting the write current as a threshold upon determining the head and disk are in contact. However, Brunnett et al. fails to disclose changing an overshoot value of the write current in relation to a temperature and setting the overshoot value of the write current as a threshold upon determining that the head and disk are in contact as claimed.

Claims 7 and 17 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a method and apparatus to control changes of a flying height between a write head and a disk comprising detecting and analyzing a signal of frictional vibration between the disk and the head and setting a magnitude of the overshoot value of the write current upon detecting and analyzing the signal of frictional vibration, as presented in the environment of claims 7 and 17. It is noted that the closest prior art, Brunnett et al., shows changing the write current and setting the write current as a threshold upon determining the head and disk are in contact. However, Brunnett et al. fails to disclose changing an overshoot value of the write current in relation to a temperature and setting the overshoot value of the write current as a threshold upon determining that the head and disk are in contact as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2651

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fioravanti Figures 3-4 and 8-11 show acoustic sensing of head/disk contact. Smith Figures 4-1 through 4B show determining head flying height due to write currents. Price, Jr. et al. Figures 1-3C show write current overshoot control. Simozato Figures 3-4D, 6, and 10 show setting an optimum write current in relation to a temperature.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L. Habermehl whose telephone number is (571)272-7556. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Habermehl/jlh
15 Sep 05



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600